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(56) Documents cited

US 4877045 A

US 4527579 A

US 3489157 A

(58) Field of search

UK CL (Edition L) A4P PMB

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On-line databases: WPI, EDOC

(54) Tiltable umbrellas

(57) A tilt mechanism (10) for an umbrella shaft comprises a forked part (13, 29) and a tongued part (14, 27) each with a spigot (15, 16) for securing in respective pole portions, a through pivot pin (17) and a locking sleeve (18) slidable between a locking position embracing both the fork and tongue, and a release position in which it allows pivoting. A corner (30) of the tongue is bevelled to allow pivoting to a 90° position, and the sleeve has a notch (31) wider than the tongue whereby the sleeve (18) can be slid to and from alternative locking positions.

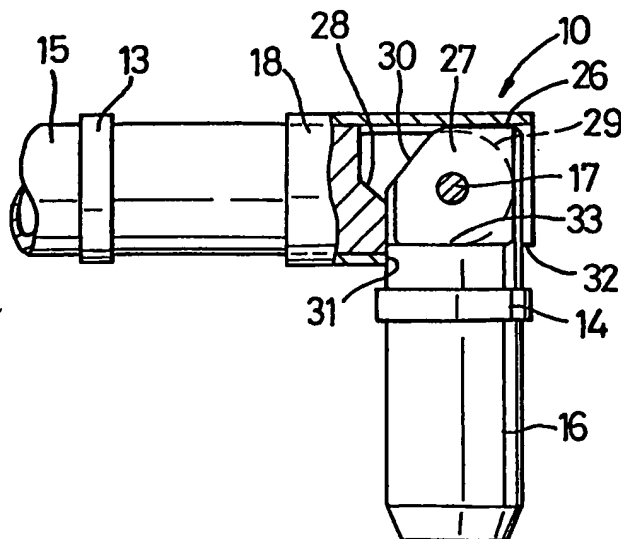


Fig. 8

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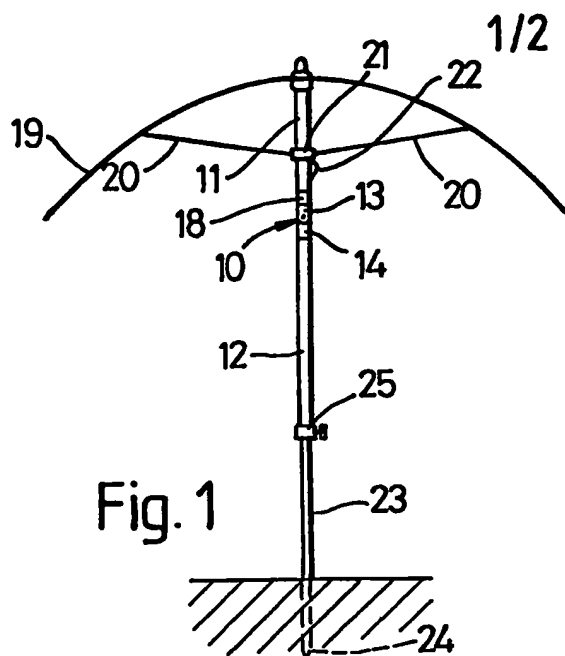


Fig. 1

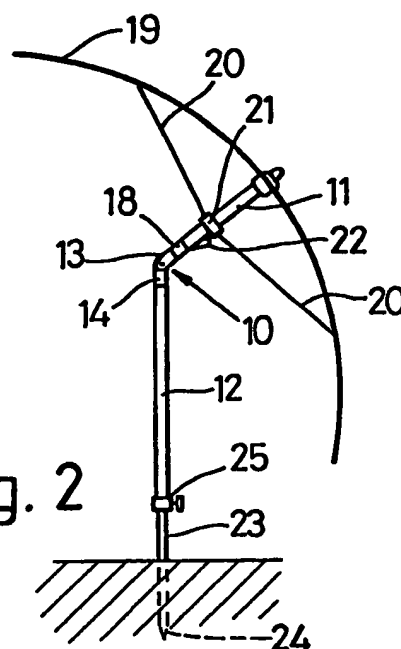


Fig. 2

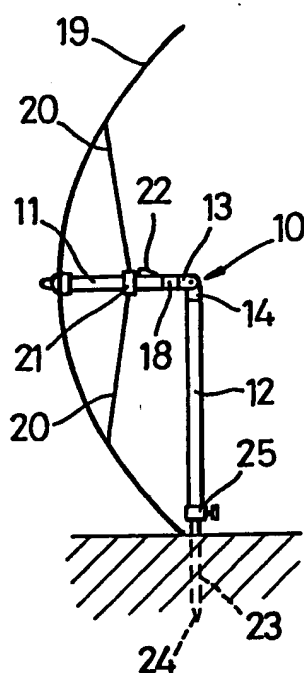


Fig. 3

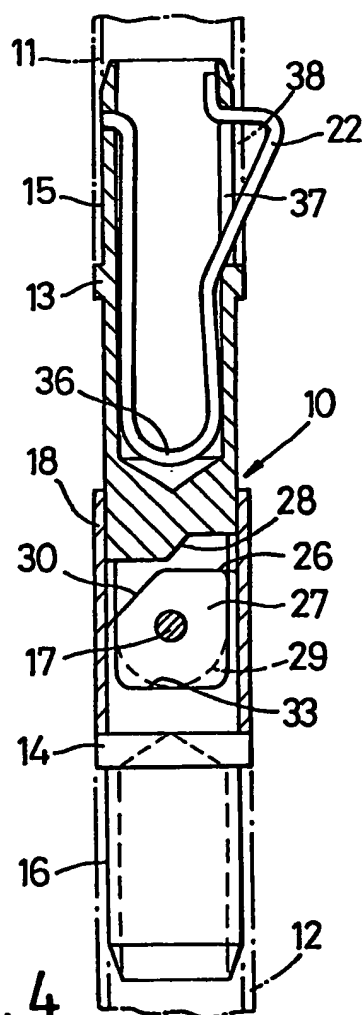


Fig. 4

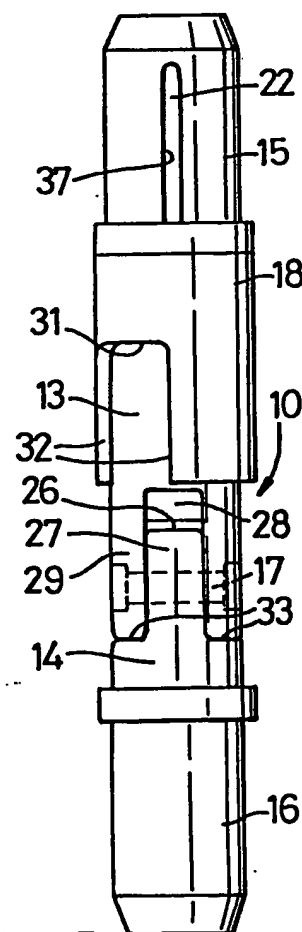


Fig. 5

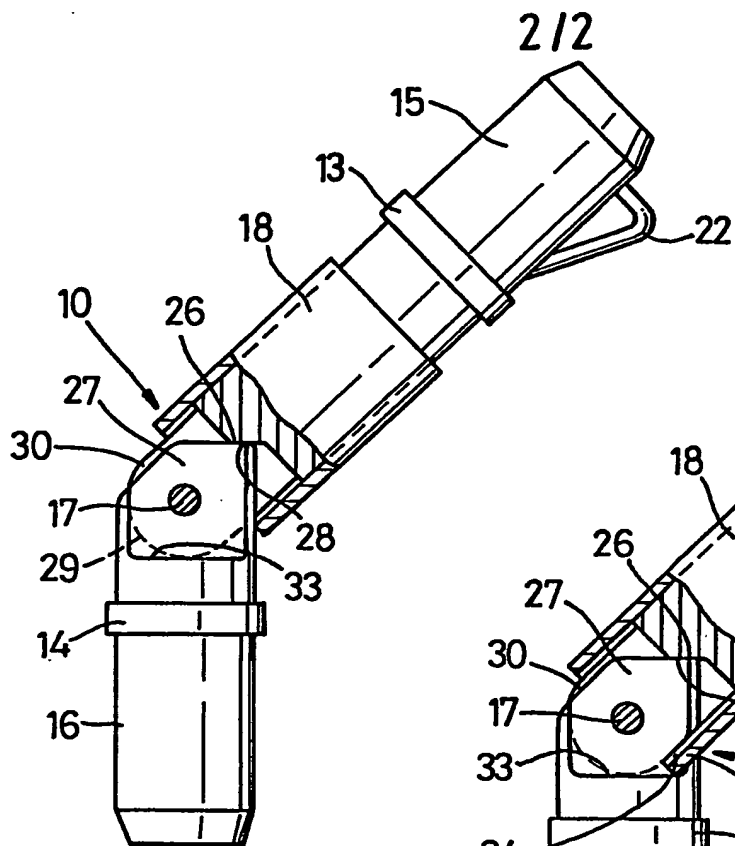


Fig. 6

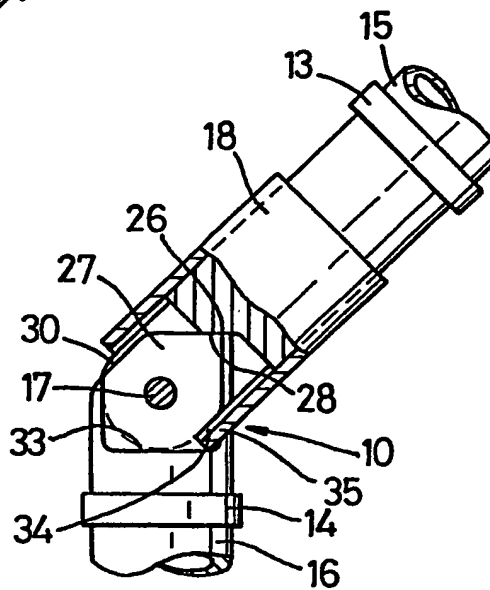


Fig. 7

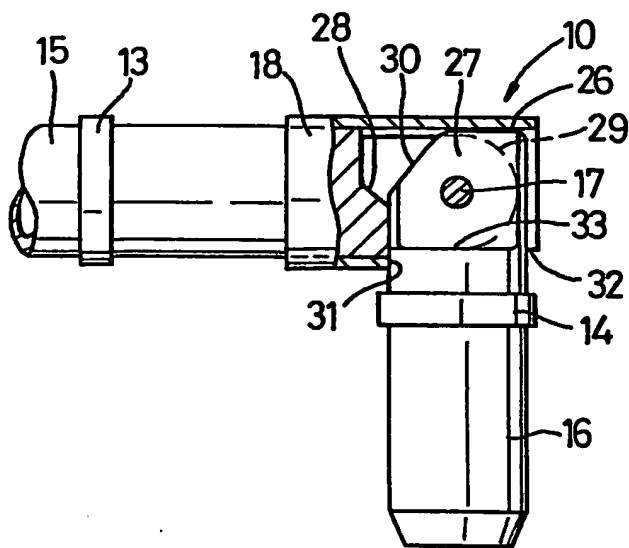


Fig. 8

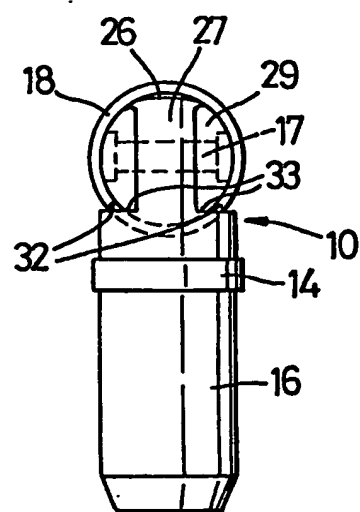


Fig. 9

TILTABLE UMBRELLAS

This invention relates to tiltable umbrellas, particularly but not exclusively to anglers' umbrellas, being also applicable to garden/patio umbrellas.

The most usual type of tiltable umbrella incorporates
5 a tilt between two portions of a tubular pole, the tilt comprising a forked part and a tongued part each with a spigot secured in the end of the respective pole portion, a pivot pin through the interengaged fork and tongue, and a locking sleeve
10 slidable from and to a locking position in which it embraces both the fork and the tongue to and from a release position in which it allows one tilt part to be inclined to the other tilt part.

The sleeve is usually slidable upwards to the release position, so that gravity will cause the sleeve to slide
15 automatically into or towards locking position when the tilt parts are brought into axial alignment. The extent of inclination (up to 45°) may be determined by a corner on the tongue encountering an abutment within the forked end and/or the tilt may be set and/or locked in inclined relationship by
20 an end of the sleeve engaging an appropriately inclined and positioned notch in the tongue, in which case the tilt parts are usually fitted to the pole portions with the forked tilt part secured to the upper pole portion and the tongued tilt part secured to the lower pole portion, so that gravity will
25 encourage the sleeve to engage the slot in the tongue when the forked part is tilted with respect to it.

An object of the invention is to provide a tiltable

umbrella with means whereby the pole portions can be set and locked at 90° to each other, so as to provide for a highly advantageous disposition of the canopy of an angler's or other umbrella without having to unscrew one pole part from another
5 coaxial part and then screw them together again in perpendicular relationship.

According to the present invention, in a tiltable umbrella of the type initially described, the locking sleeve is slidable from and to a release position on the forked tilt
10 part, a corner of the tongue is radiussed or bevelled to allow the tilt parts to pivot to a 90° relative disposition of the pole portions, and the end of the sleeve adjacent the tongued tilt part has a notch at one side having a width greater than the thickness of the tongue but less than the diameter of the
15 spigot of the tongued tilt part and a length exceeding half the width of the tongue, whereby when the pole portions are set at 90° to each other the sleeve can be slid to and from an alternative locking position in which the notch embraces the tongue, and with the sides of the notch abutting shoulders
20 between the tongue and the spigot of the tongued tilt part and/or with the other, square corner of the tongue abutting the inside of the sleeve opposite the notch.

For greatest security of the aforesaid alternative locking position, the length of the notch is at least equal to
25 the width of the tongue, but preferably exceeds it, and preferably in addition to the aforesaid abutting both of the sides of the notch with the shoulders and of the square corner of the tongue with the inside of the sleeve. It will be

evident that the forked tilt part is preferably secured to the upper pole portion (i.e., that pole portion carrying the canopy) so that gravity will cause the sleeve to slide automatically into or towards the in-line locking position.

5 It will also be evident that the square corner of the tongue that may abut the inside of the sleeve in the 90° locking position can be the corner that on tilting the other way encounters an abutment within the forked end to set the tilt angle of, up to, 45°.

10 Another object of the invention is to minimise the distance between the pivot of the tilt and the usual sliding collar carrying the bracing ribs for the canopy when the latter is open.

 Therefore, also in accordance with the present
15 invention, in a tiltable umbrella of the type initially described, the spigot of the tilt part secured in the upper pole portion is hollow and incorporates the spring loop of a wire catch for the sliding collar carrying the bracing ribs for the canopy, which catch is urged by the spring loop to
20 project through longitudinal slots in that hollow spigot and upper pole portion for engagement with the collar.

 It will be evident that the spigot of the tilt part secured in the lower pole portion will also, as is usual, be hollow to effect a further saving in weight and material
25 (usually die-cast metal).

 An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 is a diagrammatic side elevation of a tiltable umbrella provided with a tilt in accordance with the invention and shown in the in-line position;

Figure 2 corresponds to Figure 1 but shows the
5 umbrella canopy tilted to 45°;

Figure 3 also corresponds to Figure 1 but shows the canopy tilted to 90° in the opposite direction to that in Figure 2;

Figure 4 is a full-scale axial section through the
10 tilt of the umbrella of Figures 1 to 3 in in-line position;

Figure 5 is an elevation of the tilt from the right-hand side of Figure 4 and with the locking sleeve raised;

Figure 6 is a part-sectional elevation corresponding to Figure 4 but showing the tilt in the 45° position
15 corresponding to Figure 2;

Figure 7 corresponds to part of Figure 6 but shows a minor modification;

Figure 8 is a part-sectional elevation corresponding to Figure 4 but showing the tilt in the 90° position
20 corresponding to Figure 3; and

Figure 9 is an elevation from the right-hand side of Figure 8.

The umbrella of Figures 1 to 3 incorporates a tilt
between two portions 11, 12 of a tubular pole, the tilt
25 comprising a forked part 13 and a tongued part 14 each with a spigot 15, 16 (see Figures 4 to 9) secured in the end of the respective pole portion, a pivot pin 17 (also see Figures 4 to 9) through the interengaged fork and tongue, and a locking

sleeve 18 slidable from and to a locking position in which it embraces both the fork and the tongue (see Figure 4) to and from a release position (see Figure 5) in which it allows one tilt part 13 to be inclined to the other tilt part 14.

5 The umbrella also incorporates a canopy 19 with bracing ribs 20 carried by a sliding collar 21, the canopy being held open when the collar is held up by a wire catch 22.

 The lower pole portion 12 houses an extendable pole part 23 having a ground-penetrating spike 24, and the pole
10 part 23 is secured in extended or retracted position by a locking device 25.

 The sleeve 18 is slidable upwards to the release position (Figure 5), so that gravity will cause the sleeve to slide automatically into or towards locking position when the
15 tilt parts 13, 14 are brought into axial alignment (Figure 4). The extent of inclination (up to 45°) in one direction is determined by a square corner 26 on the tongue 27 of the tilt part 14 encountering an abutment 28 within the forked end 29 of the other tilt part 13 (see Figures 6 and 7).

20 The other corner 30 of the tongue 27 is bevelled (it could, alternatively, be radiussed) to allow the tilt parts 13, 14 to pivot to a 90° relative disposition of the pole portions 11, 12 (see Figure 3 and Figures 8 and 9), and the sleeve 18 has a notch 31 at one side having a width greater
25 than the thickness of the tongue 27 but less than the diameter of the spigot 16 of the tilt part 14 and a length exceeding the width of the tongue, whereby when the pole portions 11, 12 are set at 90° to each other the sleeve 18 can be slid to and

from a locking position (shown in Figures 8 and 9) in which the notch 31 embraces the tongue, and with the sides 32 of the notch abutting shoulders 33 between the tongue 27 and the spigot 16 of the tongued tilt part 14 (see particularly Figure 9), and with the other, square corner 26 of the tongue abutting the inside of the sleeve 18 opposite the notch 31.

As shown in Figure 7, the tongue 27 may optionally be provided with an appropriately inclined and positioned notch 34 for engagement by an end portion 35 of the sleeve 18 offset from the notch 31 to lock the tilt 10 in the 45° position.

As shown in Figure 4, the spigot 15 of the tilt part 13 is hollow and incorporates the spring loop 36 of the wire catch 22 for the sliding collar 21 carrying the bracing ribs 20 for the canopy 19, which catch is urged by the spring loop to project through longitudinal slots 37, 38 in that hollow spigot and the upper pole portion 11 for engagement with the collar.

The spigot 16 of the other tilt part 14 is also hollow to effect a further saving in weight and material, both tilt parts being made of die-cast metal.

CLAIMS

1. A tiltable umbrella of the type initially described in which, the locking sleeve is slidable from and to a release position on the forked tilt part, a corner of the tongue is radiussed or bevelled to allow the tilt parts to
5 pivot to a 90° relative disposition of the pole portions, and the end of the sleeve adjacent the tongued tilt part has a notch at one side having a width greater than the thickness of the tongue but less than the diameter of the spigot of the
10 tongued tilt part and a length exceeding half the width of the tongue, whereby when the pole portions are set at 90° to each other the sleeve can be slid to and from an alternative locking position in which the notch embraces the tongue, and with the sides of the notch abutting shoulders between the tongue and the spigot of the tongued tilt part and/or with the
15 other, square corner of the tongue abutting the inside of the sleeve opposite the notch.

2. A tiltable umbrella as in Claim 1, wherein the length of the notch is at least equal to the width of the tongue.

20 3. A tiltable umbrella as in Claim 1, wherein the length of the notch exceeds the width of the tongue.

4. A tiltable umbrella as in any one of Claims 1 to 3, wherein the forked tilt part is secured to the upper pole portion so that gravity will cause the sleeve to slide
25 automatically into or towards the in-line locking position.

5. A tiltable umbrella as in any one of Claims 1 to 4, wherein the square corner of the tongue that may abut the

inside of the sleeve in the 90° locking position determines the extent of inclination in the opposite direction to the 90° relative disposition by encountering an abutment within the forked end.

5 6. A tiltable umbrella as in Claim 5, wherein the tilt is set and/or locked in inclined relationship by an end of the sleeve engaging an appropriately inclined and positioned notch in the tongue.

 7. A tiltable umbrella as in any one of Claims 1 to
10 6, wherein the spigot of the tilt part secured in the upper pole portion is hollow and incorporates the spring loop of a wire catch for the sliding collar carrying the bracing ribs for the canopy, which catch is urged by the spring loop to project through longitudinal slots in that hollow spigot and
15 upper pole portion for engagement with the collar.

 8. A tiltable umbrella as in Claim 7, wherein the spigot of the tilt part secured in the lower pole portion will also be hollow to effect a further saving in weight and material .

20 9. A tiltable umbrella as in Claim 7 or Claim 8, wherein the tilt parts are made of die-cast metal.

 10. A tiltable umbrella substantially as hereinbefore described with reference to the accompanying drawings

25 11. A tilt for an umbrella, the tilt being as defined in any one of Claims 1 to 9.

 12. A tilt for an umbrella substantially as hereinbefore described with reference to Figures 4 to 9 of the

accompanying draings.

-10-

Patents Act 1977
Examiner's report to the Comptroller and
Section 17 (The Search Report)

Application number

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Relevant Technical fields

- (i) UK Cl (Edition L) A4P PMB
- (ii) Int Cl (Edition 5) A45B 17/00

Search Examiner

MR R STAGG

Databases (see over)

- (i) UK Patent Office
- (ii) ONLINE DATABASES: WPI, EDOC

Date of Search

19 JULY 1993

Documents considered relevant following a search in respect of claims 1-12

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
Y	US 4877045 (TAI YU ENTER CO LTD) - see Claim 1	1
Y	US 4527579 (D G KNOTTER) - see Claim 1	1
A	US 3489157 (M PEARLSTINE)	1

Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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